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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,685	07/30/2003	Andrew F. Knight		6541

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ANDREW F. KNIGHT  
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EXAMINER
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RODRIGUEZ, WILLIAM H

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/629,685	<b>Applicant(s)</b> KNIGHT, ANDREW F.	
	<b>Examiner</b> William H. Rodriguez	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,6-11,13,17,21,25-33 and 41-47 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21,46 and 47 is/are allowed.
- 6) ☒ Claim(s) 1,4,10,13,25,26,28,29,32,41 and 44 is/are rejected.
- 7) ☒ Claim(s) 6-9,11,17,27,30,31,33,42,43 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

1. Prosecution on the merits of this application is reopened on claims 1, 4, 10, 13, 25, 26, 28, 29, 32, 41, 44 considered unpatentable for the reasons indicated in the detailed rejection below. Applicant is advised that the Notice of Allowance mailed is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4, 10, 13, 25, 26, 28, 29, 32, 41 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by **Judge et al. (US 6,505,691)**.



With respect to claims 1 and 41, **Judge** teaches an apparatus comprising: at least two storage tanks (2a, 2b), wherein, for each storage tank, said apparatus further comprises: a first fluid entrance valve 9a connected to and associated with said storage tank 2a; a first fluid exit valve 8a connected to and associated with said storage tank 2a; a second fluid entrance valve 6a connected to and associated with said storage tank; a second fluid exit valve 7a connected to and associated with said storage tank, wherein each of said storage tanks is configured to be filled with said first under a low pressure when its associated first fluid entrance and second fluid exit valves are open and its associated first fluid exit and second fluid entrance valves are closed, and to be drained of said fluid under a high pressure by the force of a second fluid when its associated first fluid entrance and second fluid exit valves are closed and its associated first fluid

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exit and second fluid entrance valves are open. See particularly **Figures 1b and 7**; and abstract of Judge.

The following method steps (method of operation): “wherein, for each storage tank, its associated valves are configured to be opened and closed in a cycle to sequentially fill and drain their associated storage tank of said fluid, said cycle having a cycle time” **do not add any patentable weight** to the claims because virtually any valves are capable of this operation.

The following method steps (method of operation): “wherein said cycles of said associated valves of said storage tanks are out of phase with each other such that at some time in which one storage tank is being filled with said fluid, at least one other storage tank is being drained of said fluid,” **do not add any patentable weight** to the claim because they are not structural limitations but rather a method of operation that depends upon future performance.

The following method steps (method of operation): “wherein said cycle time for each storage tank is between 1 and 100 or 500 milliseconds” **do not add any patentable weight** to the claim.

The recitations “propellant valves” and “pressurant valves” do not add any patentable weight to the claims because no structural limitations are recited that distinguish the invention valves from Judge’s valve, that is, just naming it a propellant valve does not make it distinguishable or patentable from Judge’s valves. For this reason, any valve taught by Judge can be called either a propellant or pressurant valve.

With respect to claim 4, **Judge's** valves inherently have an opening time and a closing time. See particularly **Figures 1b** of Judge.

With respect to claim 10, **Judge** teaches that the associated second fluid exit valve for each storage tank has a total flow cross sectional area that is at least one-tenth of a maximum cross sectional area of said storage tank in a direction perpendicular to a flow direction of said fluid inside said storage tank. See particularly **Figures 1b** of Judge.

With respect to claim 13, **Judge** teaches that at least one of said associated first fluid valves for each storage tank has a total flow cross sectional area that is at least one-fourth of a maximum cross sectional area of said storage tank in a direction perpendicular to a flow direction of said fluid inside said storage tank. See particularly **Figures 1b** of Judge.

With respect to claim 25, **Judge** teaches an apparatus comprising: at least one pressure vessel 2a, a piston movable in said vessel (column 5 lines 44-47), a first fluid entrance valve 9a connected to and associated with said vessel 2a; a first fluid exit valve 8a connected to and associated with said vessel 2a; a second fluid entrance valve 6a connected to and associated with said vessel; a second fluid exit valve 7a connected to and associated with said vessel, wherein said vessel is configured to be filled with said first under a low pressure when its associated first fluid entrance and second fluid exit valves are open and its associated first fluid exit and second fluid entrance valves are closed, and to be drained of said fluid under a high pressure by the force of a second fluid when its associated first fluid entrance and second fluid exit valves are closed and its associated first fluid exit and second fluid entrance valves are open. See particularly **Figures 1b and 7**; and abstract of Judge.

The following method steps (method of operation): “wherein, for each storage tank, its associated valves are configured to be opened and closed in a cycle to sequentially fill and drain their associated storage tank of said fluid, said cycle having a cycle time” **do not add any patentable weight** to the claims because virtually any valves are capable of this operation.

The following method steps (method of operation): “wherein said cycles of said associated valves of said storage tanks are out of phase with each other such that at some time in which one storage tank is being filled with said fluid, at least one other storage tank is being drained of said fluid,” **do not add any patentable weight** to the claim because they are not structural limitations but rather a method of operation that depends upon future performance.

The following method steps (method of operation): “wherein said cycle time for each storage tank is between 1 and 250 milliseconds” **do not add any patentable weight** to the claim.

The recitations “propellant valves” and “pressurant valves” do not add any patentable weight to the claims because no structural limitations are recited that distinguish the invention valves from Judge’s valve, that is, just naming it a propellant valve does not make it distinguishable or patentable from Judge’s valves. For this reason, any valve taught by Judge can be called either a propellant or pressurant valve.

With respect to claim 26, **Judge** teaches that the apparatus comprises a piston. See particularly **Figures 1b and 7**; and column 5 lines 44-47 of Judge.

With respect to claim 28, **Judge** teaches at least two pressure vessels (2a, 2b), and wherein said at least two entrance valves and the two exit valves are connected to a same pressure vessel of said at least two pressure vessels. See particularly **Figures 1b** of Judge.

With respect to claim 29, **Judge** teaches that at least one of said exit valves has a total flow cross sectional area that is at least one-tenth of a maximum cross sectional area of said at least one pressure vessel in a direction perpendicular to a flow direction of said fluid inside said at least one pressure vessel. See particularly **Figures 1b** of Judge.

With respect to claim 32, **Judge** teaches that at least one of said entrance valves has a total flow cross sectional area that is at least one-fourth of a maximum cross sectional area of said at least one pressure vessel in a direction perpendicular to a flow direction of said fluid inside said at least one pressure vessel.

With respect to claim 44, **Judge** teaches that the apparatus comprises a piston. See particularly **Figures 1b and 7**; and column 5 lines 44-47 of Judge.

#### ***Allowable Subject Matter***

4. Claims 21, 46 and 47 are allowed.
5. Claims 6-9, 11, 17, 27, 30, 31, 33, 42, 43 and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodriguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
William H. Rodriguez  
Examiner  
Art Unit 3746

7/11/08